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BERIBERI IN THE UNITED STATES.

Beriberi, or "endemic multiple neuritis" or "kakke" as it has been variously called, is a disease not without interest to the American physician and health officer, sporadic cases and outbreaks having been reported in several of the States.

In 1890 Putnam reported several cases among New England fishermen of what was possibly beriberi and referred to other cases of what seemed to be the same disease antedating these by ten years.^a

A series of 71 cases was reported among the patients in the State Insane Hospital at Tuscaloosa, Ala., during the years 1895 and 1896.^b The first case developed in February, 1895, in a white woman. There were no other cases until the following November when 7 developed. In the next six weeks 5 more appeared. Then there were no new cases until September, 1896, when 58 were recorded. Of the total of 71 cases, 21 were fatal. Sixty-four of the cases were among white patients, and of these 15 were fatal, while of the 7 cases among negroes 6 were fatal.

A somewhat similar outbreak, which was probably also beriberi, is reported to have occurred in 1895 at the Arkansas State Insane Hospital at Little Rock.

The superintendent of the Texas state lunatic asylum at Austin, in his annual report for the year ended August 31, 1907, states that in the early part of July an epidemic of beriberi developed in that institution and that there were over 200 cases with 20 deaths. The disease was confined to the patients, none of the attendants being affected. It was also stated that since 1891 there had been each year a limited number of cases of the disease, occurring usually in the summer and fall, but that it had never assumed an epidemic form until 1907.

In the monthly bulletin of the California state board of health for December, 1909, there was published a list of 25 deaths from beriberi reported in California during the years 1907, 1908, and 1909. Of these, 22 were Japanese, 2 Chinese, and 1 German. The list was published with the note:

The following list of deaths from beriberi is given to show that this disease is present and widely, though sparsely, distributed. * * * A similar number of deaths in Japan would argue some 500 or 600 existing cases.

^a Putnam (James J.) *Journal of Nervous and Mental Disease*, Vol. XV, No. 8, p. 495.

^b Bondurant, E. D., *New York Medical Journal*, Vol. LXVI, p. 685.

An outbreak of beriberi among convicts in South Carolina was reported April 8 of this year in the Public Health Reports, page 437. There were at least 17 cases and several deaths. The diagnosis was confirmed by an officer who had had experience with the disease in the Philippine Islands. The local physicians stated that similar cases had occurred not infrequently in past years.

Various theories as to the etiology of beriberi have been advanced from time to time. These have consisted mainly of two general classes, the one assuming the disease to be an infection and the other assuming it to be due to faulty nutrition or intoxication. In this connection a paper read before the Far Eastern Association of Tropical Medicine at Manila on the 10th of last March by Dr. H. Fraser, delegate from the government of the Malay states, is of considerable interest, as being perhaps the most satisfactory piece of work which has so far been done on the subject.^a

Doctor Fraser experimented with chickens in lots of 12. One lot was fed upon white, polished rice; another lot of 12 upon unpolished rice. In the lot to which polished rice was fed, 8 cases of beriberi appeared between the sixtieth and seventieth day. Those fed upon unpolished rice remained well. The feeding was continued for several weeks and the chickens in the lot fed upon polished rice began to die. The lot fed on unpolished rice continued to remain well. This same experiment was repeatedly made with other groups of chickens with the same result. Then lots of chickens in which beriberi had been produced were fed with unpolished rice and they rapidly recovered.

The next experiment was to feed two lots of chickens as in the first instance, one upon polished rice and the other upon unpolished rice until beriberi had been produced in chickens fed upon polished rice. Then the food was changed. Those which had been fed upon polished rice were fed upon unpolished rice and those which had up to this point been fed upon unpolished rice were given polished rice. The result was that the sick chickens recovered and after the usual period of approximately sixty days the chickens that were then receiving the polished rice developed beriberi. Later an opportunity presented for performing the experiment upon man. Two hundred and fifty laborers, who were being sent to a part of the country in which beriberi had not existed to work upon railroad construction, were divided into two lots, half of them being fed upon polished rice, the other half upon unpolished rice. The men were carefully picked to exclude any cases of beriberi, incipient or otherwise, from among them. Beginning with the sixtieth day, cases of beriberi appeared among the laborers who were being fed upon polished rice; none among the others. The feeding was continued for a sufficient length of time to show that no cases would develop among those that were fed upon unpolished rice. Then the food was reversed. Those who had been previously fed upon polished rice were given the unpolished, and vice versa, with the same result as that which had been obtained in the experiments with chickens. The cases of beriberi proceeded to recover, while after a period of approximately sixty days cases of the disease appeared among the group of laborers to which originally unpolished rice had been fed, but which later received the polished rice.

^a New York Medical Journal, April 30, 1910, p. 762.

To ascertain, if possible, the reason why a diet of polished rice apparently produced the disease, the polishings from rice were fed to chickens affected with beriberi, with the result that they recovered. Then a group of chickens was placed upon a diet of polished rice and was fed in addition a sufficient amount of polishings to make up for that which had been removed from the rice used. No beriberi developed among the chickens in this group. It was found that chickens did not develop beriberi until the polishings given with the rice were reduced to less than half of that which had been removed from the whole rice.

The statement is also made that during the preceding year, unpolished rice had been used in all the public institutions in the Straits Settlements, and that cases of beriberi had ceased to develop in these institutions.

Doctor Aron of the Philippine Medical School also presented a paper before the association giving the result of work which seemed in many ways to corroborate the results obtained by Fraser.

As previously noted on page 647, Passed Assistant Surgeon Heiser reported that in view of the findings above referred to, the beriberi patients in the hospitals of the bureau of health of the Philippine Islands have been treated by administering rice polishings, with the result that the cases rapidly recovered and that unpolished rice was being used in institutions in which beriberi had been formerly rife and that the disease had completely disappeared.

That more may be learned of the prevalence and geographic distribution of beriberi in the United States it will be appreciated if health officers and others knowing of cases of this disease will write to the Surgeon-General of the Public Health and Marine-Hospital Service, Washington, D. C.